

CLAIMS:

1. A funds processing system including at least one funds processing machine in which a user inputs currency bills and substitute funds, the at least one funds processing machine comprising:
 - 5 an input receptacle adapted to receive a stack of currency bills and substitute funds;
 - a processing module coupled to the input receptacle and adapted to process the currency bills and substitute funds; and
 - a return receptacle coupled to the processing module and adapted to return the
 - 10 substitute funds to the operator of the funds processing machine.
2. The system of claim 1, wherein the substitute funds are casino script.
3. The system of claim 1, wherein the substitute funds are paper tokens.
- 15 4. The system of claim 1, wherein the substitute funds are bar coded tickets.
5. The system of claim 1, wherein the processing module is adapted to scan and count the currency bills and substitute funds at a high rate of speed.
- 20 6. The system of claim 5, wherein the high rate of speed is at least 350 documents per minute.
7. The system of claim 1 further comprising:
 - 25 a host system communicatively coupled to the at least one funds processing machine; and
 - a casino gaming network communicatively coupled to the at least one funds processing machine and to the host system.

8. A method of processing currency bills and substitute funds using a funds processing machine, the method comprising the steps of:

receiving in an input receptacle a stack of currency bills and substitute funds, wherein the substitute funds includes one of casino script, paper tokens, and bar coded tickets;

scanning the currency bills and substitute funds in a processing module; and transporting the substitute funds from the input receptacle to a return receptacle.

9. The method of claim 8, wherein the step of scanning is performed at a high rate of speed.

10. The method of claim 8 further comprising the step of communicatively coupling the funds processing machine to a casino gaming network.

11. A system for processing both currency bills and substitute currency media, the system including a document processing apparatus, the apparatus comprising:

an input receptacle adapted to receive currency bills and substitute currency media;

at least one output receptacle adapted to receive currency bills and substitute currency media after the currency bills and substitute currency media have been evaluated;

a transport mechanism adapted to transport the currency bills and substitute currency media, one at a time, from the input receptacle to the at least one output receptacle along a transport path;

an evaluation unit comprising at least one currency detector disposed along the transport path between the input receptacle and the output receptacle, the at least one currency detector being capable of evaluating currency bills, and a first media detector disposed along the transport path between the input receptacle and the output receptacle, the first media detector being capable of evaluating substitute currency media; and

a controller coupled to the evaluation unit, the controller being adapted to control the operation of the transport mechanism and the operation of the evaluation unit.

5 12. The apparatus of claim 11 further comprising a communications port electrically coupled to the controller.

10 13. The system of claim 12 further comprising a coin sorting apparatus communicatively coupled to the communications port of the document processing apparatus, said coin sorting apparatus sorting and counting a plurality of coins into one or more coin hoppers, said coin sorting apparatus including communications means for communicating information associated with said counting of said plurality of coins.

15 14. The apparatus of claim 11 wherein the controller causes the transport mechanism to halt in response to the detection of a particular currency bill or substitute currency medium that meets or fails to meet one or more criteria, wherein the halting causes the particular currency bill or substitute currency medium to be located at a predetermined position.

20 15. The apparatus of claim 11 wherein the controller flags a currency bill or substitute currency medium meeting or failing to meet one or more criteria, the currency bill or substitute currency medium meeting or failing to meet one or more criteria being termed a flagged document, the apparatus further comprising a routing interface comprising a data retrieval device, the data retrieval device receiving information from a user of the
25 apparatus specifying a set of one or more output receptacles to which flagged documents are to be directed.

30 16. The apparatus of claim 15 further comprising a control unit coupled to the controller, the control unit including denomination keys, each of the denomination keys being associated with a different amount of currency, the selection of one of the

denomination keys causing the associated amount of currency to be added to a running total amount of currency processed by the device.

17. The apparatus of claim 11 further comprising a control unit coupled to the controller, the control unit being adapted to receive information from a user of the apparatus and to display information to a user of the apparatus.

18. The apparatus of claim 17, wherein the information includes characteristic information associated with a substitute currency medium.

19. The apparatus of claim 18, wherein the characteristic information includes the value associated with a substitute currency medium.

20. The apparatus of claim 18, wherein the substitute currency media are barcoded tickets having a barcode disposed thereon, each barcoded ticket having a ticket number, the characteristic information including the ticket number of the barcoded ticket.

21. The apparatus of claim 17 wherein the control unit includes a touch screen.

22. The apparatus of claim 17 wherein the control unit includes a video display.

23. The apparatus of claim 11 wherein the evaluation unit evaluates the currency bills and substitute currency media at a rate of at least about 1000 documents per minute.

24. The apparatus of claim 11 wherein the evaluation unit evaluates the currency bills and substitute currency media at a rate of at least about 1500 documents per minute.

25. The apparatus of claim 11 further comprising a document facing mechanism coupled to said evaluation unit, said document facing mechanism being adapted to rotate the orientation of the substitute currency media in one direction.

26. The apparatus of claim 11 further comprising a second media detector disposed along the transport path and proximate the at least one currency detector, wherein the first media detector is adapted to detect at least one characteristic of a first type of substitute currency media and the second media detector is adapted to detect at least one
5 characteristic of a second type of substitute currency media, the first type of substitute currency media being different from the second type of substitute currency media.

27. The apparatus of claim 26, wherein the first type of substitute currency media includes a barcode encoded according to a first barcode symbology.
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28. The apparatus of claim 26, wherein the second type of substitute currency media includes a barcode encoded according to a second barcode symbology.

29. The apparatus of claim 11 further comprising a second media detector capable of
15 evaluating substitute currency media, the first media detector and the second media detector being disposed on opposite sides of the transport path so as to be disposed adjacent to first and second opposing surfaces of the currency bills or substitute currency media passing along the transport path.

20 30. The apparatus of claim 11 wherein the at least one output receptacle is exactly one output receptacle.

31. The apparatus of claim 11 wherein the at least one output receptacle is exactly
25 two output receptacles.

32. The apparatus of claim 11 wherein the at least one output receptacle is at least eight output receptacles.

33. The apparatus of claim 11, wherein the media detector includes a barcode reader.
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34. The apparatus of claim 33 further comprising memory means for storing information associated with at least one barcode identified by the barcode reader.

35. The apparatus of claim 33 further comprising a mirror proximate the barcode reader, the mirror being positioned to deflect a light beam outputted from the barcode reader onto the surface of a document being transported along the transport path.

36. The apparatus of claim 33, wherein the substitute currency media have a barcode pattern disposed on at least one surface thereof, and wherein the controller is adapted to convert an electrical signal generated by the barcode reader into a set of characters, the electrical signal being generated in response to the scanning of a valid barcode pattern.

37. The apparatus of claim 36 further comprising:
a memory coupled to the controller, the memory being adapted to store at least a first set of characters provided by the controller; and
a communications port coupled to the controller, the communications port being adapted to transmit the at least first set of characters.

38. The apparatus of claim 11 wherein the currency detector is adapted to detect at least one characteristic of a currency bill.

39. The apparatus of claim 38, wherein the at least one characteristic is one of size, thickness, color, magnetism, reflectivity, absorbability, transmissivity, electrical conductivity, and serial number.

40. The apparatus of claim 38, wherein the at least one detection means is an optical scan head.

41. The apparatus of claim 38, wherein the at least one detection means is a magnetic sensor.

42. The apparatus of claim 38, wherein the at least one detection means is a size detection sensor.

43. The apparatus of claim 38, wherein the at least one detection means is a density
5 sensor.

44. The apparatus of claim 38, wherein the at least one detection means is a thread sensor.

45. The apparatus of claim 38, wherein the at least one detection means is an infrared
10 sensor.

46. The apparatus of claim 38, wherein the at least one detection means is an ultraviolet scan head.

47. The apparatus of claim 38, wherein the at least one detection means is a
15 fluorescent light scan head.

48. The apparatus of claim 38, wherein the at least one detection means is a full image
20 scanner.

49. The apparatus of claim 11, wherein the substitute currency media are barcoded media having a barcode on at least one surface thereof.

50. The apparatus of claim 49, wherein the barcode is a linear barcode.
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51. The apparatus of claim 49, wherein the barcoded media are casino script

52. The apparatus of claim 49, wherein the barcoded media are casino cashout tickets.
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53. The apparatus of claim 49, wherein the barcoded media are retailer coupons.

54. The apparatus of claim 49, wherein the barcoded media are gift certificates.

55. The apparatus of claim 49, wherein the barcoded media have substantially the
5 same dimensions as U.S. currency bills.

56. A system adapted to rapidly count and evaluate currency bills and barcoded media, the barcoded media having a barcode disposed on at least one surface thereof, the system comprising:

- 10 an input receptacle adapted to receive a stack of documents, the documents including currency bills and barcoded media;
at least one output receptacle adapted to receive at least a portion of the stack of documents after the documents have been evaluated;
a transport mechanism adapted to transport the documents, one at a time, from
15 the input receptacle to the at least one output receptacle along a transport path;
an evaluation unit including a first sensor disposed along the transport path between the input receptacle and the output receptacle, the first sensor being adapted to detect at least one characteristic of a currency bill, and a
20 first barcode reader disposed along the transport path between the input receptacle and the output receptacle, the barcode reader being adapted to scan a barcode; and
a controller coupled to the evaluation unit, the controller being adapted to control the operation of the transport mechanism and the operation of the
25 evaluation unit.

57. The system of claim 56, wherein the first barcode reader is adapted to scan at least 500 barcodes per minute.

30 58. The system of claim 56, wherein the first barcode reader is adapted to scan at least 1000 barcodes per minute.

59. The system of claim 56, wherein the first barcode reader is adapted to output an electrical signal representing a barcode symbol, the controller being adapted to convert the electrical signal into a barcode number.

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60. The system of claim 59 further comprising memory coupled to the controller, the memory being adapted to store the barcode number.

61. The system of claim 59 further comprising a communications port coupled to the controller, the communications port being adapted to communicatively link the controller to a computer network.

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62. The system of claim 61, wherein the computer network is a casino gaming machine network.

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63. The system of claim 61, wherein the computer network is a retailer network.

64. The system of claim 62, wherein the controller is adapted to retrieve a monetary amount associated with the barcode number from the casino gaming machine network.

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65. The system of claim 56 further comprising a control unit coupled to the controller, the control unit being adapted to display the number of barcoded media processed by the apparatus.

25 66. The system of claim 65, wherein the control unit is a touch panel display.

67. The system of claim 65, wherein said control unit is a touch/video display.

68. The system of claim 59 further comprising a control unit coupled to the controller, the control unit being adapted to display the barcode number.

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69. The system of claim 64, wherein the controller is adapted to add the monetary amount associated with the barcode number to a running total.

70. The system of claim 69, wherein the running total includes the monetary value of
5 at least one currency bill evaluated by the evaluation unit.

71. The system of claim 56 further comprising a second barcode reader coupled to the controller, the first barcode reader and the second barcode reader being disposed on opposite sides of the transport path.
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72. The system of claim 56 further comprising a printer coupled to the controller, the controller being adapted to generate a report, the report including the total amount of authentic currency bills processed from the stack of documents and the total number of substitute currency media processed from the stack of documents, the printer being
15 adapted to print at least a portion of the report.

73. The system of claim 56 further comprising a printer coupled to the controller, the printer being adapted to dispense a barcoded ticket to a user of the device.

20 74. The system of claim 73, wherein the barcoded ticket includes a barcode associated with the total amount of currency bills and substitute currency media processed by the device.

75. The system of claim 56 wherein the at least one output receptacle is exactly one
25 output receptacle.

76. The system of claim 56 wherein the at least one output receptacle is exactly two output receptacles.

30 77. The system of claim 56 wherein the at least one output receptacle is at least eight output receptacles.

78. The system of claim 56, wherein the barcode reader has a height of about 3 inches, a width of about 2.13 inches, and a depth of about 1.63 inches.

5 79. A document processing apparatus for processing a stack of currency bills and barcoded media, comprising:

an input receptacle adapted to receive a stack of documents including currency bills of mixed denominations and barcoded media;

10 a plurality of output receptacles each adapted to receive at least a portion of the stack of documents;

a transport mechanism adapted to transport the currency bills and barcoded media, one at a time, from the input receptacle to one of the plurality of output receptacles;

15 an evaluation unit disposed along the transport path between the input receptacle and the plurality of output receptacles, the evaluation unit comprising at least one currency sensor and a barcode reader positioned adjacent the transport path, the at least one currency sensor being adapted to obtain denomination characteristic information of a first currency bill, the barcode reader being adapted to scan for a barcode on a document from the stack of documents passing along the transport path, a document on which the barcode reader detects a barcode being termed a valid barcoded medium, a document on which the barcode reader does not detect a barcode being termed an invalid barcoded medium;

20 a controller coupled to the evaluation unit, the controller being programmable for directing currency bills having a first denomination to a specified first output receptacle of the plurality of output receptacles, and for directing a barcoded media having a valid barcode disposed thereon to a specified second output receptacle of the plurality of output receptacles; and

25 a memory electrically coupled to the controller, the memory being adapted to store the denominations of the currency bills and the characters associated with barcodes on barcoded media.

80. The apparatus of claim 79, wherein the at least one currency sensor is further adapted to obtain authenticating characteristic information of a currency bill, the controller being adapted to compare the authenticating characteristic information with master authenticating information stored in a memory, the controller being further adapted to compare the denomination characteristic information with master denomination information stored in a memory, wherein currency bills whose authenticating characteristic information satisfies a predetermined relationship with the master authenticating information are termed authentic bills, currency bills whose authenticating characteristic information does not satisfy a predetermined relationship with the master authenticating information are termed suspect bills, and currency bills whose denomination characteristic information does not satisfy a predetermined relationship with the master denomination characteristic information are termed no call bills.

81. The apparatus of claim 80, wherein the controller is adapted to direct no call bills to a specified third output receptacle of the plurality of output receptacles.

82. The apparatus of claim 80, wherein the controller is adapted to direct suspect bills to a specified third output receptacle of the plurality of output receptacles.

83. The apparatus of claim 80, wherein the controller is adapted to direct no call bills to a specified third output receptacle of the plurality of output receptacles and to direct suspect bills to a specified fourth output receptacle of the plurality of output receptacles.

84. The apparatus of claim 80, wherein the controller is adapted to direct no call bills and suspect bills to a specified third output receptacle.

85. The apparatus of claim 80, wherein the controller is adapted to direct invalid barcoded media to a specified third output receptacle

86. The apparatus of claim 80, wherein the controller is adapted to direct invalid barcoded media to the specified second output receptacle.

87. A document processing apparatus adapted to process currency bills and substitute
5 currency media, the apparatus:

an input receptacle adapted to receive documents including currency bills and
substitute currency media, the substitute currency media being redeemable
documents;

10 at least one output receptacle adapted to receive at least a portion of the
documents after the portion of the documents have been evaluated;

a transport mechanism adapted to transport the documents, one at a time, from
the input receptacle to the at least one output receptacle along a transport
path;

15 an evaluation unit comprising at least one scanner disposed along the transport
path between the input receptacle and the output receptacle, the at least a
first scanner being capable of scanning for at least one characteristic
associated with a currency bill, the evaluation unit further comprising a
second scanner capable of scanning for at least one characteristic
associated with a substitute currency medium; and

20 a controller coupled to the evaluation unit, the controller being adapted to control
the operation of the transport mechanism and the operation of the
evaluation unit.

88. A document processing apparatus for processing both currency bills and substitute
25 currency media, the apparatus comprising:

an input receptacle for receiving currency bills and substitute currency media;

a plurality of output receptacles for receiving currency bills and substitute
currency media after the currency bills and substitute currency media have
been evaluated;

a transport mechanism for transporting the currency bills and substitute currency media, one at a time, from the input receptacle to one of the plurality of output receptacles along a transport path;

an evaluation unit comprising a scanhead disposed along the transport path between the input receptacle and the output receptacle, the scanhead comprising a sensor for evaluating the currency bills and a barcode reader for evaluating the substitute currency media;

a controller coupled to the evaluation unit, the controller controlling the operation of the transport mechanism and the operation of the evaluation unit; and

an interface coupled to the controller, the interface being adapted to receive instructions from an operator of the apparatus specifying one or more of the plurality of output receptacles to which currency bills and substitute currency media are to be directed.

89. A document processing apparatus for processing both currency bills and redeemable documents, the apparatus comprising:

an input receptacle for receiving currency bills and redeemable documents;

a plurality of output receptacles for receiving currency bills and redeemable documents after the currency bills and the redeemable documents have been evaluated;

a transport mechanism for transporting the currency bills and redeemable documents, one at a time, from the input receptacle to selected ones of the plurality of output receptacles along a transport path;

an evaluation unit comprising a detector disposed along the transport path between the input receptacle and the output receptacle, the detector being adapted to detect characteristic information associated with a currency bill and characteristic information associated with a redeemable document; and

a controller coupled to the evaluation unit, the controller controlling the operation of the transport mechanism and the operation of the evaluation unit.

90. A method of processing both currency bills and substitute currency media in a document processing device, the method comprising the steps of:

receiving a stack of documents including currency bills and substitute currency media to be evaluated in an input receptacle of the device;

5 transporting each of the documents, one document at a time, past a currency detector and past a media detector;

scanning each document to obtain characteristic information associated with a currency bill;

10 scanning each document to obtain characteristic information associated with a substitute currency medium;

determining whether each document meets or fails at least one criterion; and

directing each document to at least one output receptacle based on the step of determining.

15 91. The method of claim 90 further comprising the steps of:

receiving information from a user of the device specifying whether the device should suspend operation based upon the detection of a substitute currency medium failing to meet the at least one criterion; and

20 suspending operation of the device in response to receiving information from the user of the device specifying that the device should suspend operation based upon the detection of a substitute currency medium failing to meet the at least one criterion.

25 92. The method of claim 90 wherein the device includes a plurality of output receptacles and wherein the characteristic information associated with a currency bill includes denomination characteristic information, the method further comprising the steps of:

comparing the denomination characteristic information of the currency bill with a master denomination information;

flagging the currency bill as a flagged bill when the denomination characteristic information of the currency bill fails to meet one or more criteria associated with the master denomination information; and

receiving routing information from a user specifying to which of the plurality of
5 output receptacles the flagged bill is to be directed, the step of receiving permitting the user to direct the flagged bill to a selected one of the plurality of output receptacles.

93. The method of claim 92 further comprising the steps of:

adding the value of the currency bills of one or more denominations whose
10 denomination characteristic information meets one or more criteria associated with the master denomination information to a running total; and

displaying the running total to the user of the device.

94. The method of claim 93 further comprising the steps of:

15 receiving denomination information from the user specifying the denomination of a flagged bill;

adding the denomination of the flagged bill to the running total; and
resuming operation of the device.

20 95. The method of claim 90 wherein the device includes a plurality of output receptacles and wherein the characteristic associated with the currency bills includes the authenticity of the currency bills, the method further comprising the step of receiving information from a user of the device specifying to which of the plurality of output receptacles currency bills whose authenticity have been determined and currency bills
25 whose authenticity have not been determined are to be directed, the step of receiving permitting the user to direct currency bills whose authenticity have not been determined to selected one or more of the plurality of output receptacles.

96. The method of claim 90, wherein the characteristic information associated with the
30 substitute currency media includes barcode information, wherein the step of scanning each

document to obtain characteristic information associated with a substitute currency medium is carried out using a barcode reader, the method further comprising the steps of:

decoding from a valid barcode a barcode number representative of the valid barcode; and

5 storing the barcode number in a memory.

97. The method of claim 90 further comprising the steps of:

counting the total number of substitute currency media processed by the device;
and

10 displaying the total number to the user of the device.

98. The method of claim 97, wherein the displaying step is carried out using a touch screen panel.

15 99. The method of claim 96 further comprising the step of displaying to a user of the device the barcode number.

100. The method of claim 96 further comprising the step of retrieving from a network computer a value associated with the barcode number.

20 101. The method of claim 100, wherein the value is an amount of currency redeemable for cash.

102. The method of claim 100, wherein the value is an amount of currency redeemable
25 for goods or services.

103. The method of claim 100, wherein the value is a promotional discount.

104. A method of rapidly counting and evaluating currency bills and barcoded media in
30 a document processing device, the method comprising the steps of:

receiving a stack of currency bills of mixed denominations and barcoded media to
 be evaluated in an input receptacle of the device, the barcoded media being
 redeemable documents having a barcode disposed thereon;
 transporting the currency bills and the barcoded media, one document at a time,
 5 from the input receptacle to one of a plurality of output receptacles;
 determining the denomination of the currency bills;
 decoding the barcode numbers from valid barcodes disposed on the barcoded
 media;
 storing the barcode numbers and the denominations of the currency bills;
 10 receiving information from a user of the device specifying to which of the plurality
 of output receptacles currency bills of one or more denominations and
 barcoded media having decodable barcodes are to be directed; and
 directing the barcoded media having invalid barcodes to the offsort receptacle.

- 15 105. A method of processing currency bills and barcoded media in a document
 processing device, the method comprising the steps of:
- receiving a stack of currency bills of mixed denominations and barcoded media to
 be evaluated in an input receptacle of the device;
 transporting the currency bills and barcoded media, one document at a time, from
 20 the input receptacle to one of a plurality of output receptacles or to an
 offsort receptacle;
 evaluating the currency bills including authenticating and denominating the
 currency bills;
 maintaining a total of the value of currency bills processed;
 25 maintaining a total of the number of currency bills processed;
 evaluating the barcoded media including scanning for a valid barcode disposed on
 the barcoded media;
 storing the barcode numbers associated with the barcoded media having valid
 barcodes;
 30 maintaining a total of the number of substitute media processed; and

displaying to a user of the device information associated with the currency bills
and information associated with the substitute currency media.

106. The method of claim 105, wherein the information associated with the currency
5 bills includes the total of the value of currency bills processed.

107. The method of claim 105, wherein the information associated with the currency
bills includes the number of currency bills processed.

108. The method of claim 105, wherein the information associated with the substitute
10 currency media includes the number of substitute currency media processed.

109. The method of claim 105, wherein the information associated with the substitute
currency media includes the value of substitute media processed.

110. The method of claim 105 further comprising the steps of:
retrieving from a network computer the values associated with the barcode
numbers;
maintaining a total of the value of barcoded media processed; and
20 displaying to the user of the device the total of the value of barcoded media
processed.

111. A method of processing currency bills and redeemable documents in a single
document processing device, the method comprising the steps of:
25 receiving a stack of currency bills;
detecting currency characteristic information associated with each currency bill;
receiving a stack of redeemable documents;
detecting media characteristic information associated with each redeemable
document; and
30 storing the media characteristic information in a memory.